

PROGRESS REPORT
National Park Service - Northwest Alaska Network (NWAN)
Inventory and Monitoring Program
Vascular Plant Inventory, Summer 2001

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Three northwest Alaska parklands, Bering Land Bridge National Park and Preserve (BELA), Cape Krusenstern National Monument (CAKR), and Noatak National Preserve (NOAT) were visited during the 2001 field season as part of the NWAN Vascular Plant Inventory. Included in this progress report is a brief overview of the season's efforts and a complete list of collections for each parkland covered. All collections are curated, databased, and held at the UAF Museum Herbarium in Fairbanks.

Bering Land Bridge National Park and Preserve

Sites visited: N arm of Shishmaref Inlet, locally known as Cowpack Lagoon. Collections were made in the vic. of Singeak (Sinik) shelter cabin and Kividlo house site, along the inner coast of the lagoon from Singeak house site to Cowpack Inlet, lower Cowpack R., and at 'Ray's Camp', a site on the outer barrier island N of Cowpack Inlet. Access was by fixed-wing aircraft to Singeak cabin, and by foot and/or motorboat from there to the remaining sites.

Dates: 6-10 Aug 2001

Crew: Carolyn Parker (UAF Museum Herbarium), Reidar Elven and Heidi Solstad (U. Oslo Herbarium, Norway), Alfred Weyioyanna (Shishmaref).

Habitats/landforms visited: Active and semi-stabilized sand dunes and slacks, sand blowouts, strand beaches, wet, fresh-water graminoid meadows, brackish meadows, *Empetrum* heath, active coastal peat slump banks, ancient and historical human occupation sites, ponds, protected freshwater gullies, heath shrub tundra, willow thickets, and herbaceous snowmelt slopes along the lagoon coastline.

A total of 239 collections, representing 173 plant species, were collected. Of these, 32 are new records for BELA. Considering that most of the habitats, and sites, we visited had not been previously collected from within BELA, it is curious we did not find more taxa newly documented for the Park. A casual glance at our lists suggests that many of the lowland plants we found along the coast had been collected previously at low elevation sites further inland (Murray et al., in report to NPS) and during the few small collection efforts made in the vicinity of Cape Espenberg (collections at ALA). The coastal habitats in this region may be generally depauperate of uniquely 'coastal' species.

A very quick glance at the expected list generated by AKNHP indicates we are 'missing' alot of species which should be relatively common on the Seward Peninsula and which were collected during Murray et al. inventory trips there, but were collected along the road system N of Nome and S of the Park boundary. We'll spend some more time looking at the documented and expected lists to try to determine where future survey efforts should be made to fill in this gap.

Noteworthy collections:

The coastal grass *X_Dupoa labradorica* was collected near the Singeak shelter cabin, which, along with collections made at CAKR earlier in the summer (see below), document this grass for the first time in northwestern

North America. The only other previously known locality is Hudson Bay in eastern Canada. This grass is described as a (probably) sterile, but stabilized hybrid between *Poa eminens* and *Dupontia fisheri*, also both documented at Singeak. This material has been reviewed by J. Cayouette and S. Darbyshire (DAO, Ottawa, Canada) who originally described *X_Dupoa labradorica* from Hudson Bay.

Plants newly documented at BELA and listed as rare (S3) to critically imperiled (S1) in Alaska by the AKNHP:

Minuartia biflora G5S2 vic. Singeak house site. This tiny caryophyll is probably overlooked by many collectors. Recent inventories throughout Alaska have documented many additional localities within the state.

Puccinellia vaginata G4S1? lower Cowpack R. A taxonomically difficult genus that is currently undergoing review.

Cape Krusenstern National Monument

Sites visited: Kakagrak Hills, Tasaychek Lagoon, Krusenstern Lagoon area including beach, vic. mouth of Tukrok River, base of Kimirok Hill, base of Ingitkalik Mt., and NW end of Sheshalik Spit. Access to the Kakagrak Hills, Sheshalik Spit, and the mouth of the Tukrok River were by fixed-wing aircraft. Other sites were accessed on foot, or by NPS motorboat.

Dates: 26 June - 4 July (Kakagrak Hills and Krusenstern Lagoon area); 31 July - 3 Aug 2001 (Sheshalik Spit).

Crew:

Jun-Jul trip: Carolyn Parker, Al Batten, Amy Denton (UAF Museum Herbarium)
Thomas Heinlein (NPS)

Jul-Aug trip: Carolyn Parker (UAF Museum Herbarium), Reidar Elven and Heidi Solstad (U. Oslo Herbarium, Norway)

Habitats/landforms visited: limestone fellfields, tors, scree, rock outcrops, open and riparian shrub tundra, gravel beaches and ancient beach ridges, lagoon margins, moist to wet meadows (both fresh water and brackish), snowmelt meadows at coastline and in alpine, tall shrub thickets.

A total of 467 collections representing 296 species were collected. This collection, combined with those of Steve Young (1973, at ALA), bring a total of 303 plant species currently documented for CAKR. As almost all the species collected this season are newly documented for CAKR, this notation is not included in the accompanying list.

Curiously, we collected 128 species which were not on the expected list, undoubtedly reflecting how poorly documented the entire adjacent areas are, from which the expected list was generated. In turn, we did not find 63 species which were on the expected list. Most of these uncollected, but predicted, species are characteristic of boreal and continental habitats which were not sampled during the 2001 season and are not extensive within the Monument.

Future surveys could focus on the edge of the boreal woodland at the SE end of the Monument in the vicinity of the Noatak R. delta, the northern region which is underlain by acidic (non-calcareous) bedrock, and inland fresh water aquatic habitats.

Noteworthy:

Potentilla fragiformis, a showy cinquefoil of the coastal zone, was collected at Sheshalik. This species had been previously thought to be known only from the coastal areas of Chukotka and Kamchatka, Russia, and not part of the Alaskan flora. After confirming the identification of our material from Sheshalik, a careful search through the UAF Herbarium specimens of *P. hyparctica* (a similar looking plant having a very different style shape, a significant taxonomic character for this group) resulted in our finding 3 more specimens of *P. fragiformis* which had been previously mis-identified! These collections were from Kivalina (A. Bucknell, 1960), Sheshalik (S. Young, 1973), and Gambell, St. Lawrence Island (D. Mason, 1976). Further searching through the early North American flora literature found references to *Potentilla fragiformis* being in 'Alaska'. A loan to the UAF Museum Herbarium of very early Alaskan specimens now held at the Canadian Museum of Nature (CAN) in Ottawa included additional specimens of *P. fragiformis* from St. Paul and St. Lawrence islands.

We will recommend that this handsome cinquefoil be added to the AKNHP list of rare plants for Alaska. It will be included in the upcoming Flora of North America volumes by Dr. Barbara Ertter who is writing the updated treatment for *Potentilla*. Plants are now being grown at the UAF research greenhouse from seed that was removed from the Sheshalik collections. The

species must be watched for in the future throughout the Bering Sea-Chukchi Sea coastlines of Alaska.

Three collections of *X_Dupoa labradorica*, a hybrid grass that is noted in the above BELA discussion, were also made at Sheshalik Spit. This species, which is new to Alaska, is now documented from 2 parklands.

Plants newly documented at CAKR which are listed as rare (S3) to critically imperiled (S1) in Alaska by AKNHP are:

Gentianopsis detonsa G3G4?S1 Sheshalik Spit. This large-flowered gentian is long known from the Kotzebue Sound vicinity and scattered sites in interior Alaska and Yukon, Canada. The taxonomic relationship between *G. detonsa* and the primarily Asian species, *Gentianopsis barbata*, needs to be clarified.

Carex holostoma G4?S2 Sheshalik Spit.

Papaver walpolei G3S3 Kakagrak Hills. A minor NW-ward range extension within Alaska.

Festuca lenensis G4S3 Ingitkalik Mt., Krusenstern Lagoon. A minor NW range extension with Alaska; uncommon to find this species near the coast.

Cryptogramma stelleri G5S2S3 Kakagrak Hills. A minor N-ward range extension within Alaska.

Stellaria dicranoides G3S3 Kakagrak Hills.

Zannichellia palustris G5S3 Sheshalik Spit.

Puccinellia vaginata G4S3 Sheshalik Spit. A taxonomically difficult genus that is currently undergoing review.

Noatak National Preserve

Sites visited: Desperation Lake, Siniktanneyak Mt., vic. confluence Buccaneer and Primus creeks., middle Kugururok R. valley, lower and middle Anisak R. valley, lower Mapik Cr. vic., lower and middle Nimiuktuk R. valley. A base camp at Primus Creek was accessed by fixed-wing aircraft. Additional sites were accessed by helicopter or on foot.

Dates: 7-18 July 2001

Crew: Carolyn Parker (UAF Museum Herbarium), Randy Meyers (BLM-Kotzebue)

Habitats/landforms visited: rocky fellfields, boulder slopes, limestone outcrops, tussock (cottongrass) tundra, moist to wet mixed forb meadows, gravel lake beaches, ancient human occupation sites, dryas fellfield tundra, open shrub tundra, active river floodplains, young to mature riparian cottonwood stands, willow and alder thickets, late-lying snowmelt meadows, heath tundra.

A total of 331 collections representing 217 species, including 128 newly documented for the Preserve, were collected. Of these, 28 species were not on the expected list. A total of 322 species are now documented for NOAT. We collected selectively here and did not 'recollect' many widely distributed or common species that had already been documented for the Preserve by earlier workers. Instead, we targeted sites and/or habitats that had not been visited previously, or which in some way seemed unique and likely to support uncommon, rare, or previously undocumented species.

Future surveys should focus on higher alpine sites having a diversity of bedrock types, riparian and boreal habitats along the Noatak R., isolated mid-elevation rock outcrops and upland areas, areas of high bird or mammal activity, eutrophic wetland meadows and other aquatic habitats (ponds, lakes), lush, protected mixed forb meadows on nutrient-rich sites, and ancient human occupation sites. These suggestions are based both on the known collection history and on the characteristic habitats of many of the species remaining on the expected list, but which have not yet been documented at NOAT.

Noteworthy:

We recollected a yet-unnamed *Claytonia* from Siniktanneyak Mt., N of Feniak Lake, which was first collected by Steve Young in the early 1970's. Live plants are now being grown at UAF, and at the University of Washington, where Dr. Robin O'Quinn is reviewing the taxonomy of the section of *Claytonia* to which this plant appears to belong.

Plants now documented at NOAT which are listed as rare (S3) to critically imperiled (S1) in Alaska by the AKNHP:

Cryptogramma stelleri G5S2S3 middle Anisak R. valley. A minor NNW range extension within Alaska.
Stellaria dicranoides G3S3 Desperation Lake.
Carex holostoma G4?S2 Desperation Lake.
Oxytropis arctica var. *barnebyana* G2G3?S2S3 middle Anisak R. valley. A minor NE range extension.
Oxytropis kokrinensis G3S3 middle Anisak R. valley.
Oxytropis tananensis G2G3?S2S3 middle Anisak R. valley. A significant NW range extension for this species which is otherwise known only from interior eastcentral Alaska. Determination confirmed by B.A. Yurtsev who first described the species.
Colpodium wrightii G3G4/S2S3 Siniktanneyak Mtn.
Festuca lenensis G4S3 middle Anisak R. valley.
Beckwithia camissonis G4T3T4S2 Desperation Lake.

Potentilla stipularis G5S1 Desperation Lake and Primus Creek vicinity. A
minor SW range extension within Alaska